

Math 160 - Instruction for the First Writing Assignment

The first writing assignment has now been posted to the course web page. This assignment is your first true writing assignment in the sense that you will produce a well-polished document that, ideally, could be published in a calculus textbook. The goals and purposes of this assignment are as follows:

1. *Written communication.* Perhaps one of the most important goals of this assignment is to work on your ability to write well. Writing mathematics is decidedly different than writing an essay (just as, you may have noticed, reading a math text is different than reading a novel) and it will take some time to get good at it.
2. *The opportunity to act on feedback.* Though you get lots of feedback on assignments, there is no chance to revise and resubmit. This is a chance for you to act on feedback (and to correct mistakes) so that you make progress toward an excellent document.
3. *Celebrating your progress.* It's important to do this, or the constant presentation of new challenges would have us all feeling like failures all the time.
4. *A well-polished finished product that you can be proud of.* I hope this will be a satisfying accomplishment as well as a resource.

Critical Dates: The due dates of the draft and the final submission are as follows:

- Draft: October 15th
- **Final: October 20th**

Both submissions should be made in hard copy in the appropriate box outside my office.

Evaluation: Your write up will be graded on a 10-point scale with the only possible grades being 10, 9, 6, 3, or 0 points. There will be little partial credit because of the opportunity to submit a draft. In order to receive full credit, your write-up must be correct, complete, and well written. The final submission will be graded according to the following scale:

Points	Description
10	The solution is correct and well written according to the course guidelines.
9	The solution is correct but there is a small mistake that minimally impacts the readers ability to understand.
6	The solution is essentially correct but the solution doesn't meet the course guidelines or there is a problem that moderately impacts the readers ability to understand.
3	Significant progress has been made in developing and writing the solution.
0	Little or no progress has been made in developing a solution.

You will also receive 2 points for submitting your draft on time. Thus the total grade for the writing assignment will be out of 12 points.

Guidelines for Solutions: Your solutions need to clearly demonstrate your own understanding and be easily understandable to other Math 160 students. In particular:

- Your write up should be written professionally, as if you were writing a textbook. In particular, this means using full sentences, justifying all work appropriately, and formatting mathematics correctly.
- Your target audience is a peer in Math 160 who is knowledgeable in the calculus content we have covered, but who is unfamiliar with the specific problem you are solving. Everything you write should be an attempt to persuade such a person that your solution is correct. Some ways to do that are:
 - Before starting a calculation, use a sentence to briefly tell the reader what you are about to do. (For example, “We use the limit definition of the derivative to set up the following limit...”, rather than writing down a limit with no context.)
 - Explicitly state what every function and variable means before you use it. (For example, “The area of a triangle is $\frac{1}{2}bh$ ” is not sufficient, because we don’t know what b and h are. Instead, say “The area of a triangle with base b and height h is $\frac{1}{2}bh$.”)
 - Be specific. Avoid using the pronoun “it”. (For example, don’t write “Since it is positive, it is increasing.” We aren’t sure what “it” means in either case here and there’s a good chance each “it” is referring to something different. Instead, write “since f' is positive, the function f is increasing”.)
 - Keep the reader informed by writing explanations throughout your work. Never write a long chain of formulas without explaining key steps.
 - At the end of a big calculation, part, or problem, summarize your results. This should include explaining the *meaning* of your work. You do not need to include all algebra steps though. In the case of lots of algebra, you can say, “Simplifying,”.

- Your solution should follow all normal rules for written English. Aim for clarity, and don't try to sound fancy: write clearly and directly.
- You should explain how to do the problem, even if the problem does not explicitly ask you to do so.
- Do not expect to write perfect solutions on your first draft. Work out the problems on a piece of scrap paper and then type and reread for clarity.
- Your write up can be hand written or typed (for either the draft or the final version). If it is hand written, it must be well organized and the handwriting must be completely legible and clear. If you decide to type your solution, you must properly format mathematical notation and equations. The best way to do this is using $\text{\LaTeX}$, which is the scientific typesetting software that your homework assignments (and everything else in the course) are written in. For help with $\text{\LaTeX}$, send me an email and I can help get you started.
- Do not expect to finish your assignment in one night! The problems will be challenging, and then there is the added challenge of writing it up well. Give yourself plenty of time to think, talk with other students, visit the professor, think again, write, and rewrite.